GLADENKO, I.N., kand. vet. nauk; SHMIDOV, P.N., ml. nauchnyy sotrudnik; BAKAY, S.M., kand. biol. nauk; ZIMOGLYAD, N.A., kand. vet. nauk

Incidence of disease among cattle eating plenty of corn.
Veterinariia 35 no. 7:73-77 Jl '58. (MIRA 11:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy veterinarii(for Gladenko, Shmidov). 2. Nikolayevskaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya stantsiya(for Bakay). 3. Khar'kovskiy veterinarnyy institut(for Zimoglyad).
(Cattle--Diseases and pests)
(Corn(Maize))

FORTUSHNYY, V.A., kand.veterinarnykh nauk; GLADENKOV, I.N., kand. veterinarnykh nauk; PROSTYAKOV, A.P., kand.biologicheskikh nauk; SHMIDOV, P.N., mladshiy nauchnyy sotrudnik; YEZHOVA, O.I., starshiy laborant

Use of antibiotic aerosols in diseases of young pigs. Veterinariia 37 no.9:56-58 S '60. (MIRA 14:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy veterinarii.

(Swine--Diseases and pests)
(Aerosol therapy) (Antibiotics)

POPOVICHNYY, V.A., kand. veterinarnykh nauk; CHMILOV, P.N., starshiy nauchnyy sotrudnik

Effect of antibiotics in paratyphoid fever of young pigs.
Veterinariia 41 no.4:23-25 Ap '64. (MIRA 18:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy veterinarii.

FORTUSHNYY, V.A., kand. veter. nauk; SHMIDOV, P.N., nauchnyy sotrudnik; TIMOSHENKO, O.P., nauchnyy sotrudnik

Action of antibiotics and their combinations in colienteritis of calves. Veterinariia 42 no.12:11-13 D '65. (MIRA 19:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy veterinarii.

ERMILOVA, V.F.

Comparative evaluation of some methods and agents for anesthesia in labor. Akush. i gin., no.1:93-98 '63. (MIRA 17:6)

1. Iz kafedry akusherstva i ginekologii (nachal'nik - prof. G.I. Bagrinchenko) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

SHMIDT, A.

Old diabasic dikes, their age and relation to ore formation in one of Southern Ural deposits. Biul. MOIP. Otd. geol. 34 no.6:144-145 N-D '59. (MIRA 14:3)
(Ural Mountains--Dikes(Geology)

SHMIDT, A. [Smidts, A.]; KREMER, Yu. [Kremere, J.]

Biochemical principles for parenteral feeding. Vestis Latv ak no.12: 61-68 '61.

1. AN Latviyskoy SSR, Institut eksperimental'noy i klinicheskoy meditsiny

KREMER, Yu. [Kremers, J.]; MAYZEL', R. [Maizels, R.]; NAGLI, R.; SHMIDT, A. [Smidts, A.]

Method of preparing "fibrinolizat" for parenteral feeding of human subjects. Vestis Latv ak no.4:97-99 '62.

GROM, N. [Groma, N.]; DAMBERGA, B.; KREMER, Yu. [Kremers, J.]; SHMIDT, A. [Smidts, A.]

Amino acid composition and biological effectiveness of some preparations for parenteral nitrogen alimentation. Izv. AN Latv.SSR no.9:91-94 '63. (MIRA 16:12)

SHMIDT, A.A.

USSR/Engineering - Hydraulics, Nov 51
Flow Analyses

"On the Pulsation of Flow in Pressure Conduits," A. A. Shmidt, Engr

"Gidrotekh Stroi" No 11, pp 35-37

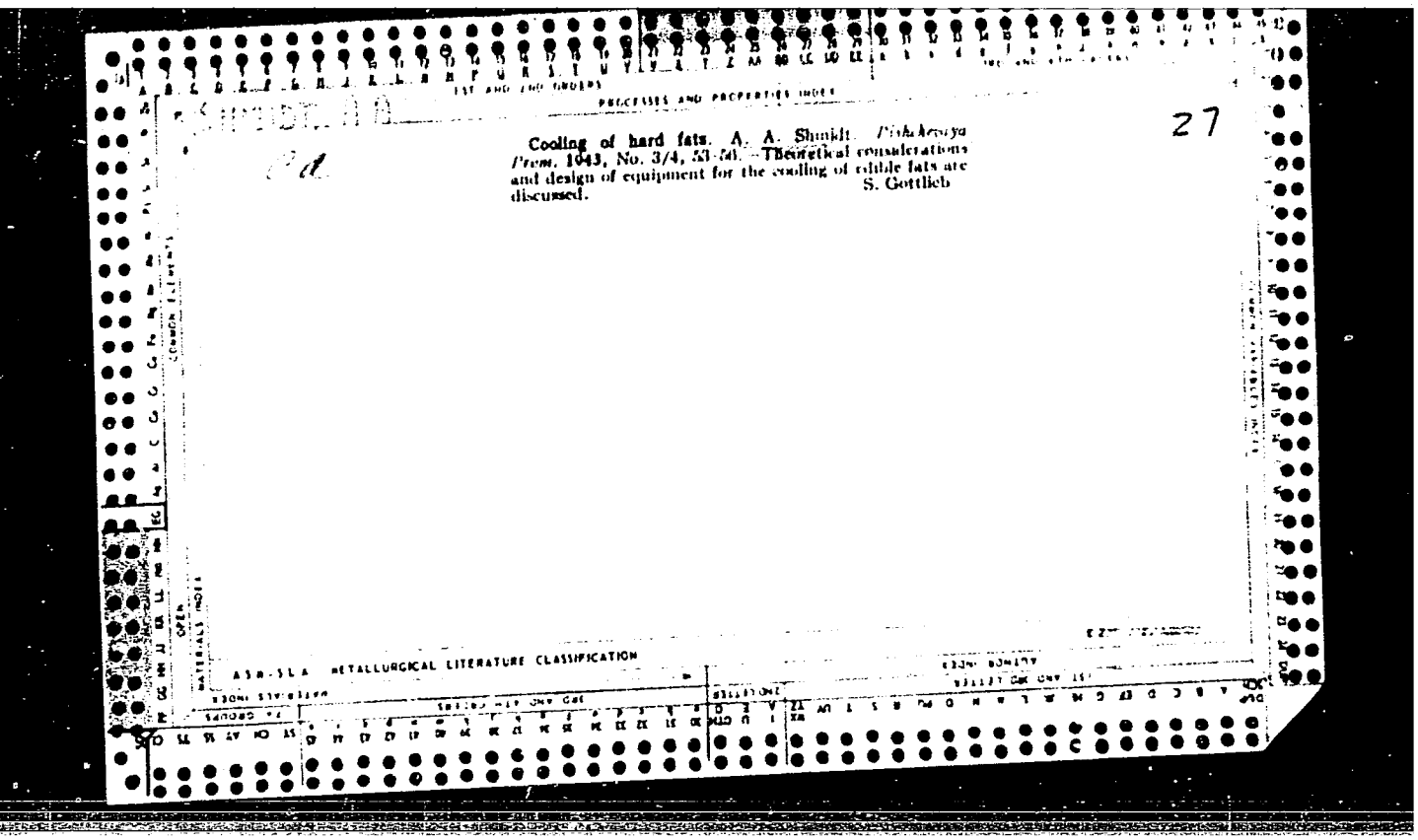
Analyzes certain processes in water conduits under head, explains flow pulsation in high-head drains and other head conduits, and suggests precautionary measures. Emphasizes influence of suction air on behavior of water flow and as a cause of hydraulic jumps.

200T90

SHMIDT, A.A., spets. red.; KOROVIN, K.I., red.; BOCHAROVA, I.V., tekhn. red.

[Exchange of experiences in continuous soap production] Obmen opytom po nepreryvnomu proizvodstvu myla. Moskva, 1962. 110 p. (MIRA 15:11)

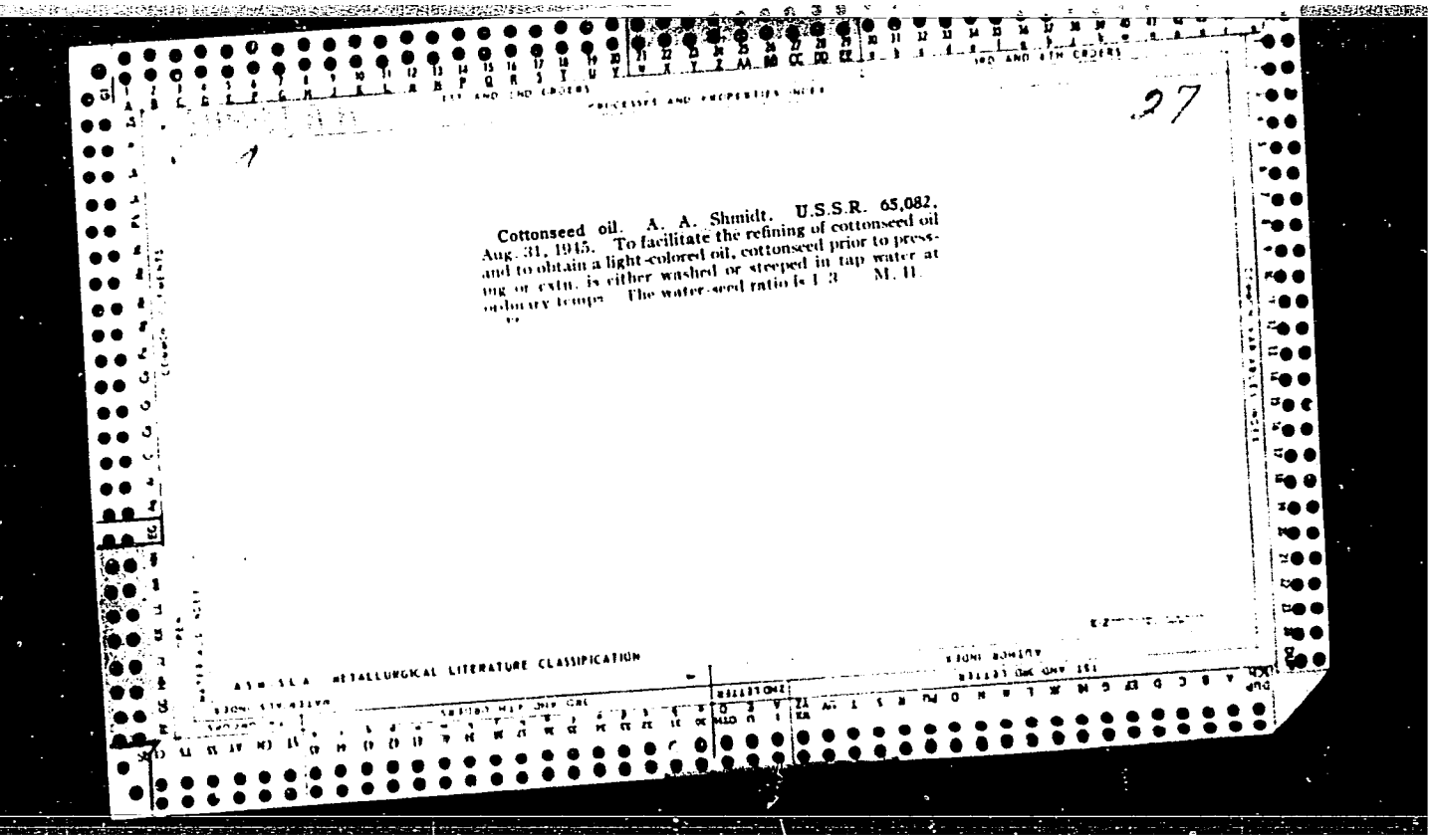
1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut nauchnoy i tekhnicheskoy informatsii.
(Soap industry) (Assembly-line methods)



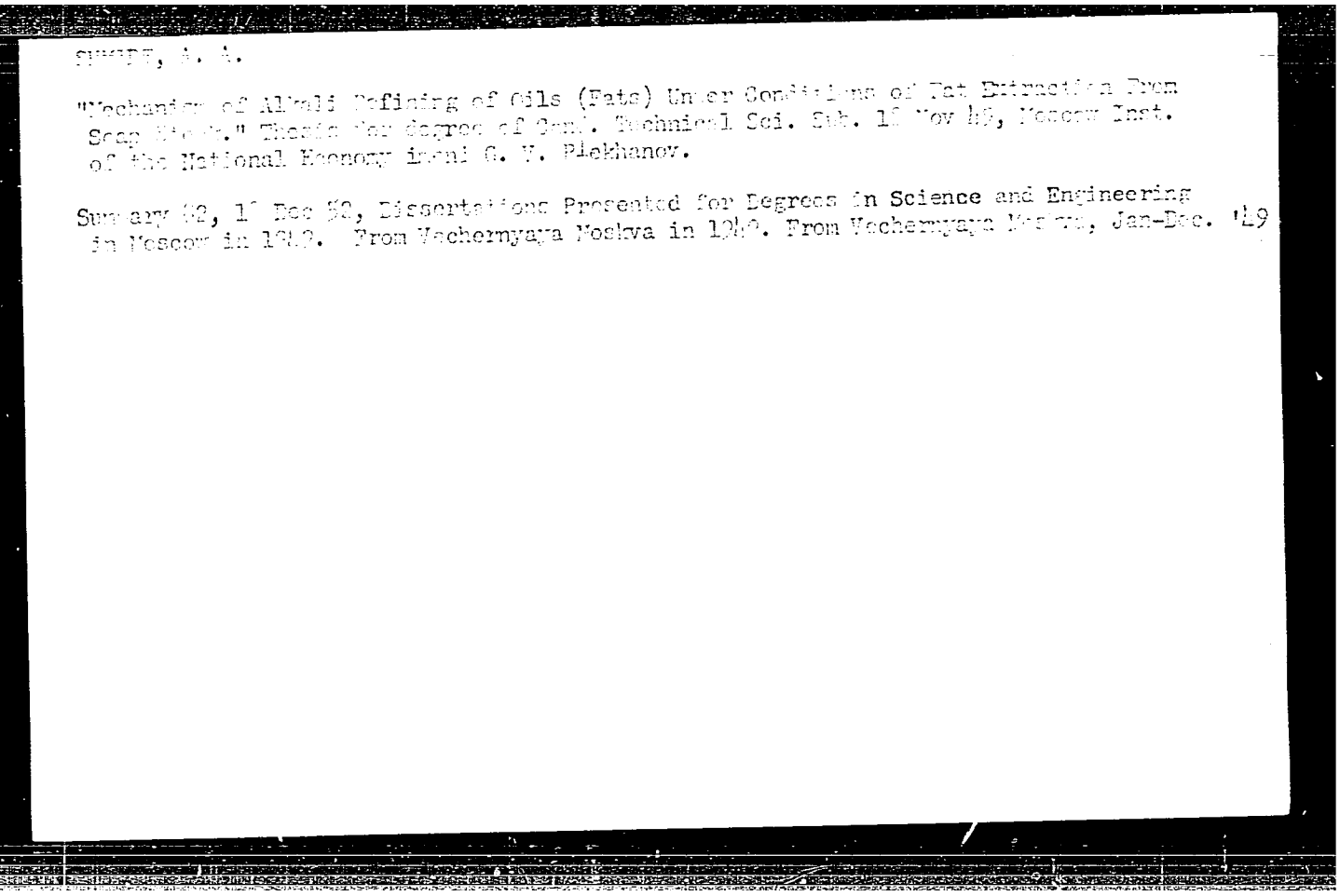
Cooling of hard fats. A. A. Shmidt. *Pishchevaya Prom.* 1943, No. 3/4, 53-60.—Theoretical considerations and design of equipment for the cooling of edible fats are discussed.
S. Gottlieb

27

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Cottonseed oil. A. A. Shmidt. U.S.S.R. 65,082, Aug. 31, 1945. To facilitate the refining of cottonseed oil and to obtain a light-colored oil, cottonseed prior to pressing or extn. is either washed or steeped in tap water at ordinary temps. The water-seed ratio is 1-3 M. H.



SHARPE, A. A.

"Mechanism of Alkali Refining of Oils (Fats) Under Conditions of Fat Extraction From Soap Stock." Thesis for degree of Cand. Technical Sci. Sub. 18 Nov 49, Moscow Inst. of the National Economy imeni G. V. Plekhanov.

Summary 52, 18 Dec 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva in 1949. From Vechernyaya Moskva, Jan-Dec. 1949

SCHMIDT, A. A.

USSR/Medicine - Fish Oil Feb 52

"A New Method of Processing Fish Oil"

Nauka i Zhizn', No 2, p 28

Describes a new method of processing cod-liver oil. This method, proposed by Prof A. A. Schmidt and the staff of the Inst of Exptl Med, Acad Sci Lat SSR, consists of processing cod livers in vacuum pans instead of the old open boilers. By using this method, the vitamin content of the fish oil is retained and its disagreeable odor is eliminated.

263T56

~~SMITS, A.~~ See ~~SMITOT, A.~~

SHMIDT, A. A

C.A. V-48
Jan 10, 1954
Fats, fatty oils, waxes & Detergents

The classification of methods for refining of fats. A. A. Smits. *Maslobolno-Zhirovaya Prom.* 18, No. 8, 10–12 (1953).—A review of the physiochemical techniques.
Vladimir N. Krukovsky

SMIT (See SHCHIBT, A.A.)

The alkaline neutralization of fats. A. Smit. *Maslobolno-Zhirovaya Prom.* 19, No. 5, 8–15(1954).—Discussion with diagrams of the interactions of alkali with free fatty acids, triglycerides, and admixed substances during the sapon. process, concn. of the reacting substances, the catalytic effect of the resulting by-products on the reaction mixt., and the formation of important colloidal systems at the fat-liquid interphase. Vladimir N. Krukovsky

~~Smits~~, A. See SHMIDT, A.A.

USSR.

Neutralization of fats over aqueous salt solution. A. Smits. *Maslobolno-Zhirovaya Prom.* 19, No. 8, 12-16 (1953); cf. *C.A.* 48, 142495.—S. discusses kinetics of disintegration of the emulsion formed between the layer of fat and aq. settlings during alkali refining, the effect of concn. of free alkali and salt in the aq. soln., and the temp. on sepn. of the refining soln. Vladimir N. Krukovsky

BUKHMAN, Mikhail Moiseyevich; SHMIDT, A.A.; BUKHARIN, V.V.; VASIL'YEVA, G.N.; KISINA, Ye.I., tekhnicheskiy redaktor;

[Production of mayonnaise] Proizvodstvo maioneza. Moskva, Pishchepromizdat, 1955. 32 p. (MLRA 9:4)
(Mayonnaise)

SHMIDT, Aron Anisimovich; PETROV, N.A., kand.tekhn.nauk, retsenzent; BARANNIKOV, M.A., inzh., retsenzent; KOVALEVSKAYA, A.I., red.; KISINA, Ye.I., tekhn.red.

[Theoretical principles of the refining of vegetable oils] Teoreticheskie osnovy rafinatsii rastitel'nykh masel. Moskva, Pishchepromizdat, 1960. 339 p. (MIRA 13:9)
(Oils and fats)

ANISIMOVA, Ye.G., inzh.; SHMIDT, A.A., kand.tekhn.nauk; SHUR, S.I., kand.khim.nauk

Problem of the physicochemical characteristics of fatty oils refined to different degrees. Masl.-zhir.prom. 25 no.8:17-20 '59. (MIRA 12:12)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya zhirovoy promyshlennosti Mosgorsovnarkhoza.
(Oils and fats)

KREMER, Yu.N.; KOKTA, A.Ya.; PUPELE, O.Ya.; SHMIDT, A.A.

Effect of folic acid on some enzymatic systems. Biokhimiia 26 no.6:975-979 N-D '61. (MIRA 15:6)

1. Chair of Biological Chemistry, Medical Institute, Riga, Latvian S.S.R.
(ENZYMES) (FOLIC ACID)

SHMIDT, A.A., kand.tekhn.nauk; GEYSHINA, K.V., inzh.

Sedimentometric analysis of a nickel catalyst. Mas.-zhir. prom. 27 no.7:20-23 Jl '61. (MIRA 14:7)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya zhirovoy promyshlennosti Mosgorsovnarkhoza.
(Sedimentation analysis)
(Catalysts, Nickel)

Shmidt, A.A.

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AUTHORS: Sinitsyn, V.V., Aleyeva, Ye.V., Bessmertnyy, K.I., Popova, Ye.P., Shmidt, A.A.

TITLE: Influence of fractional composition of synthetic fatty acids on thermal stability and practical characteristics of sodium greases

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.2, 1962, 53-59

TEXT: To explain differences in performance (gelation at 80 to 120°C) between greases thickened with sodium soaps of natural fatty acids ($C_{16} - C_{18}$) which are satisfactory and synthetic acids (fractions $C_{10} - C_{16}$ and $C_{12} - C_{20}$) which are not satisfactory, the latter were analysed by gas-chromatography. The synthetic acids were vacuum distilled into 5 fractions, the fractions having the following composition: top fraction: $C_{11} - C_{15}$, 3.1%; 1) $C_{13} - C_{17}$, 3%; 2) $C_{15} - C_{19}$, 14%; 3) $C_{16} - C_{20}$, 9.8%; 4) $C_{17} - C_{21}$, 16.8%; 5) $C_{18} - C_{22}$, 9.3%; residue, 40%. Greases were prepared from each of the fractions and their mixtures saponified with NaOH in oil MK-8. It was found that the fractions 1 to 4 gave greases which had similar satisfactory thermal properties to the greases prepared from natural stearic acid. However,

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Influence of fractional ...

fraction 5 gave greases that gelled at a lower temperature. This behaviour was similar to that exhibited by the greases prepared from the original synthetic acids. Also admixture of fraction 5, or the residue fraction, to the other fractions caused gelation to occur at a lower temperature than that characterizing the greases prepared from fractions 1 to 4. The authors conclude that some components present in fraction 5 and the residue cause the gelation to occur. Comparing the properties of the greases, it was evident that the heavier fractions have higher thickening action than the light fractions. With the increase in the mean molecular weight of the acids the consistency of the greases increases and oil separation decreases; the latter property is equivalent to an improved colloidal dispersion of the soap. Other improvements include viscosity-temperature characteristics and mechanical stability. It is concluded that the gelation of the greases is not connected with the presence in the fractions of the high molecular weight acids but with the unsaponifiable components of the residual fraction, some of which may be oxidation by-products. When the residual fraction is removed, the remaining

Influence of fractional ...

acids give generally better sodium greases than those prepared from carboxylic acids derived from animal and vegetable fats. The analysis of fractional composition of the synthetic fatty acids by gas-chromatography was carried out at NII SZhIMS by B.P.Kotel'nikov. There are 2 figures, 4 tables and 3 Soviet-bloc references.

Card 3/3

MARTYNSON, E.E., prof., otv. red.; MEREZHENSKIY, M.F., prof.. red.; MIKALAUSKAYTE, D.A.[Mikalauskaite,D.A.], prof.,red.; SHMIDT, A.A. [Smits,A.], akad.,red.; KREMER,Yu.N.[Kremers, J.], red.; PLENINA, G.N., red.; TYAKHEPYL'D,L.Ya.[Tahepold,L.], red.

[Transactions of the First Biochemical Conference of Baltic Republics and White Russia]Trudy Pervoy biokhimicheskoy konferentsii Pribaltiiskikh respublik i Belorussii. Tartu, Tartuskii gos. univ. ESSR, 1961. 507 p. (MIRA 15:9)

1. Biokhimicheskaya konferentsiya Pribaltiyskikh respublik i Belorussii. 1st, Tartu, 1960. 2. Zaveduyushchiy kafedroy biokhimii Tartuskogo gosudarstvennogo universiteta (for Martynson). 3. Vil'nyusskiy nauchno-issledovatel'skiy institut epidemiologii i gigiyeny (for Mikalauskayte). 4. Akademiya nauk Latviyskoy SSR, Chlen Prezidiuma Vsesoyuznogo biokhimicheskogo obshchestva (for Shmidt). 5. Kafedra biokhimii Rizhskogo meditsinskogo instituta (for Kremer). 6. Kafedra biokhimii Tartuskogo gosudarstvennogo universiteta (for Tyakhepyl'd).
(BIOCHEMISTRY—CONGRESSES)

44030

S/851/62/000/028/006/015
D296/D307

27 1220

AUTHOR: Shmidt, A.A.

TITLE: Biochemical disorders caused by ionizing radiation in animals, with regard to the state of nutrition of the latter

SOURCE: Akademiya nauk Latviyskoy SSR. Institut eksperimental'-noy i klinicheskoy meditsiny. Trudy, no. 28, 1962, Znacheniye faktora pitaniya v profilaktike luchevoy bolezni, no. 4, 79 - 82

TEXT: One group of rats was kept on a normal diet, whilst another was given a diet of wheat biscuits, considered to be deficient in proteins and vitamins. In each of the 2 groups some animals were exposed to total body irradiation, with 700 r dose of γ rays, emitted by the ГУТ Co-400-1 (GUT Co-400-1) apparatus, while the remainder served as a control group. The organ weight in relation to the body weight and the weight of the dry residue of the liver, lungs, kidneys and the skin were estimated in all animals, as well as the choline content of the organs. In animals kept on a normal diet, the

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Biochemical disorders caused by ...

relative weight of the lungs increased after exposure to radiation, beginning on the 20th day, whereas in animals kept on a deficient diet the weight of the lungs showed a continuous decrease starting from the first day after exposure. The choline content of the liver, as estimated by the method of Acker and Ernst, increased in all animals independently of the diet. The choline content of the lungs increased in rats maintained on the full diet. In the other organs radiation exerted no influence upon the choline content. The thiamine content of the liver (initially high in animals on an adequate diet) decreased after irradiation, whereas the initially low thiamine content of the liver of animals on a deficiency diet showed a slight increase. γ-radiation had no appreciable effect upon the content of riboflavine and vitamin B_{12}. The content of ascorbic acid of the liver and the adrenal glands increased after exposure to radiation, independently of the diet. An increase in the globin content of the blood could be observed only in animals kept on a full diet. In these animals iron accumulated to a greater degree in the spleen and the bone marrow. As a whole, this investigation (carried out by a group of workers in the author's Institute) showed that

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Biochemical disorders caused by ... D296/D307

biochemical changes are more marked in animals kept on a full diet, a fact which the author explains by the greater activity of the biochemical processes.

Card 3/3

ALIMOV, O.D., doktor tekhn.nauk; SADAKOV, Yu.P., inzh.; SHMIDT, A.A., inzh.; YUDIN, V.G., inzh.

Cutting-bar machine with a hydromechanical reducing gear for working frozen grounds. Stroi. i dor. mash. 9 no.12:4-5 D '64. (MIRA 18:3)

MARKMAN, Aleksandr L'vovich; RZHEKHIN, Vladimir Petrovich; SHMIDT, A.A., doktor tekhn. nauk, retsenzent; SERIK, A.P., red.

[Gossypol and its derivatives] Gossipol i ego proizvodnye. Moskva, Pishchevaia promyshlennost', 1965. 243 p. (MIRA 18:5)

L 35826-66

ACC NR: AP6019490 (A) SOURCE CODE: UR/0197/66/000/005/0083/0089

36
B

AUTHOR: Lazdyn', A. A.; Shmidt, A. A.

ORG: Riga Institute of Medicine (Rizhskiy meditsinskiy institut)

TITLE: Caseinolysate — a rich nitrogenous product useful for parenteral feeding

SOURCE: AN LatSSR. Izvestiya, no. 5, 1966, 83-89

TOPIC TAGS: nutrition, protein, hydrolysis, amine, biochemistry

ABSTRACT: Caseinolysate, a name given by the authors to a new protein hydrolysate containing 70% amino nitrogen, is prepared from casein by treatment with pancreatin and kefir yeast (Bacillus caucasicus). To evaluate the energy and plastic properties of the preparation for parenteral feeding, experiments were conducted on 3 dogs. In the first stage of the experiments the animals were given only water to reduce body weight by 10 to 15%. In the second stage the animals were administered a daily parenteral feeding of invert sugar (670 kcal/kg) supplemented with thiamin, riboflavin, nicotinic acid and others for 3 days. In the third stage the animals were administered a daily parenteral feeding of caseinolysate (2 g/kg) for 5 days. The following

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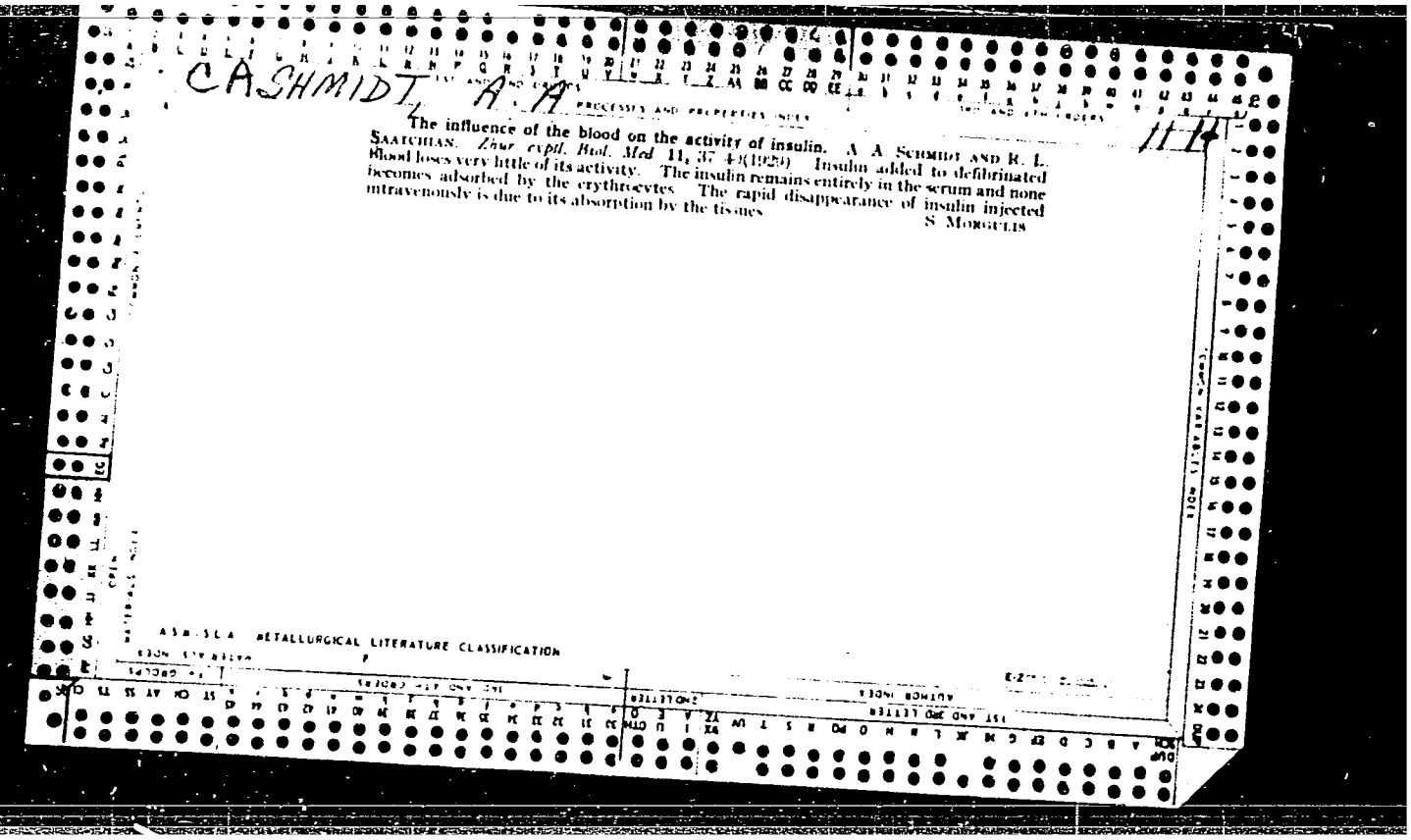
indexes were determined for each stage: total volume of circulating blood and plasma, protein levels of blood and plasma, and body weight. Urine specimens were collected during the second and third stages to determine nitrogen balance, total nitrogen, urea nitrogen, amino nitrogen and ammonia. Findings show that with caseinolysate (2 g/kg) administered parenterally for 5 days the negative nitrogen balance produced by protein deficiency becomes positive and is accompanied by normalization of the urea forming function of the liver. Over 90% of the amino nitrogen contained in caseinolysate is utilized by the animals for catabolism and tissue building. In addition to providing energy in the form of invert sugar, caseinolysate increases body weight and blood protein levels. On the basis of demonstrated properties as a source of energy and protoplasm, caseinolysate is recommended for parenteral feeding. Orig. art. has: 2 tables. [06]

SUB CODE: 06/ SUBM DATE: 12Mar66/ ORIG REF: 004/ OTH REF: 009
ATD PRESS: 5036

Card 2/2

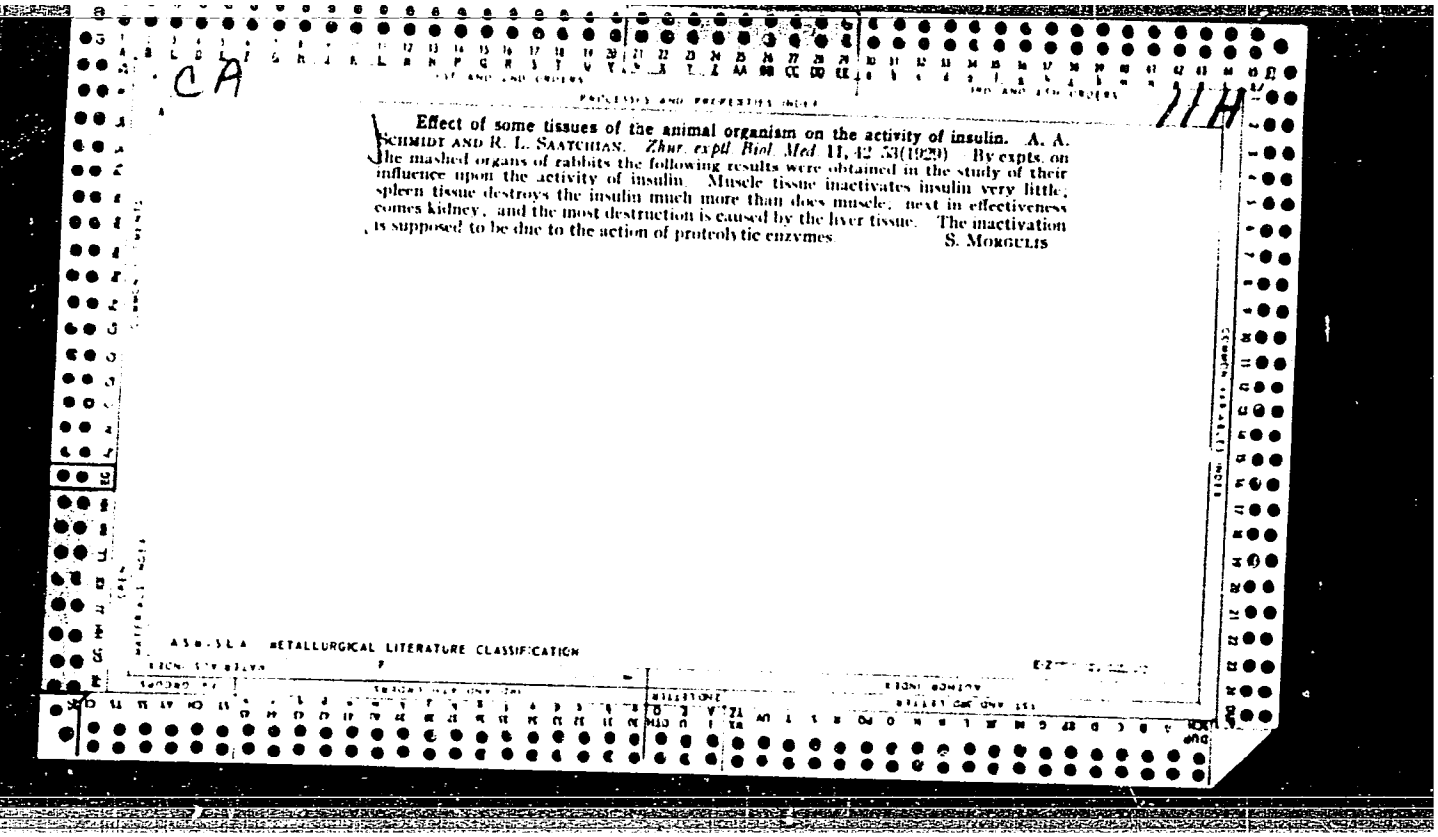


SCHMIDT, A. A.

11 14

The influence of the blood on the activity of insulin. A. A. SCHMIDT AND R. L. SAATCHIAN. *Zhur. exptl. Biol. Med* 11, 37-43(1928). Insulin added to defibrinated blood loses very little of its activity. The insulin remains entirely in the serum and none becomes adsorbed by the erythrocytes. The rapid disappearance of insulin injected intravenously is due to its absorption by the tissues.
S. MORGULIS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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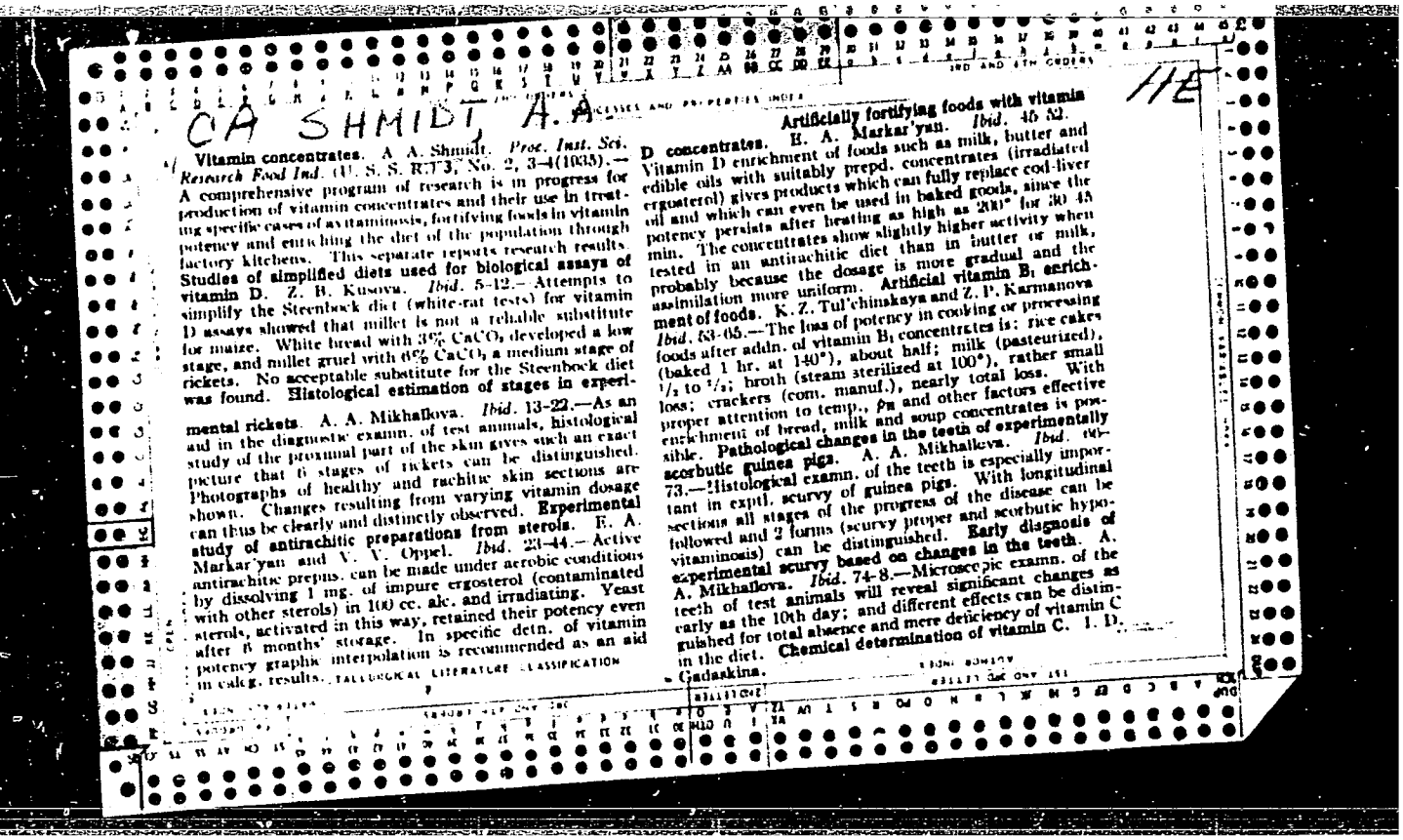
11H

Effect of some tissues of the animal organism on the activity of insulin. A. A. SCHMIDT AND R. L. SAATCHIAN. *Zhur. exptl. Biol. Med.* II, 42-53(1929). By expts. on the mashed organs of rabbits the following results were obtained in the study of their influence upon the activity of insulin. Muscle tissue inactivates insulin very little; spleen tissue destroys the insulin much more than does muscle, next in effectiveness comes kidney, and the most destruction is caused by the liver tissue. The inactivation is supposed to be due to the action of protelytic enzymes. S. MORGULIS

A5a-5La METALLURGICAL LITERATURE CLASSIFICATION

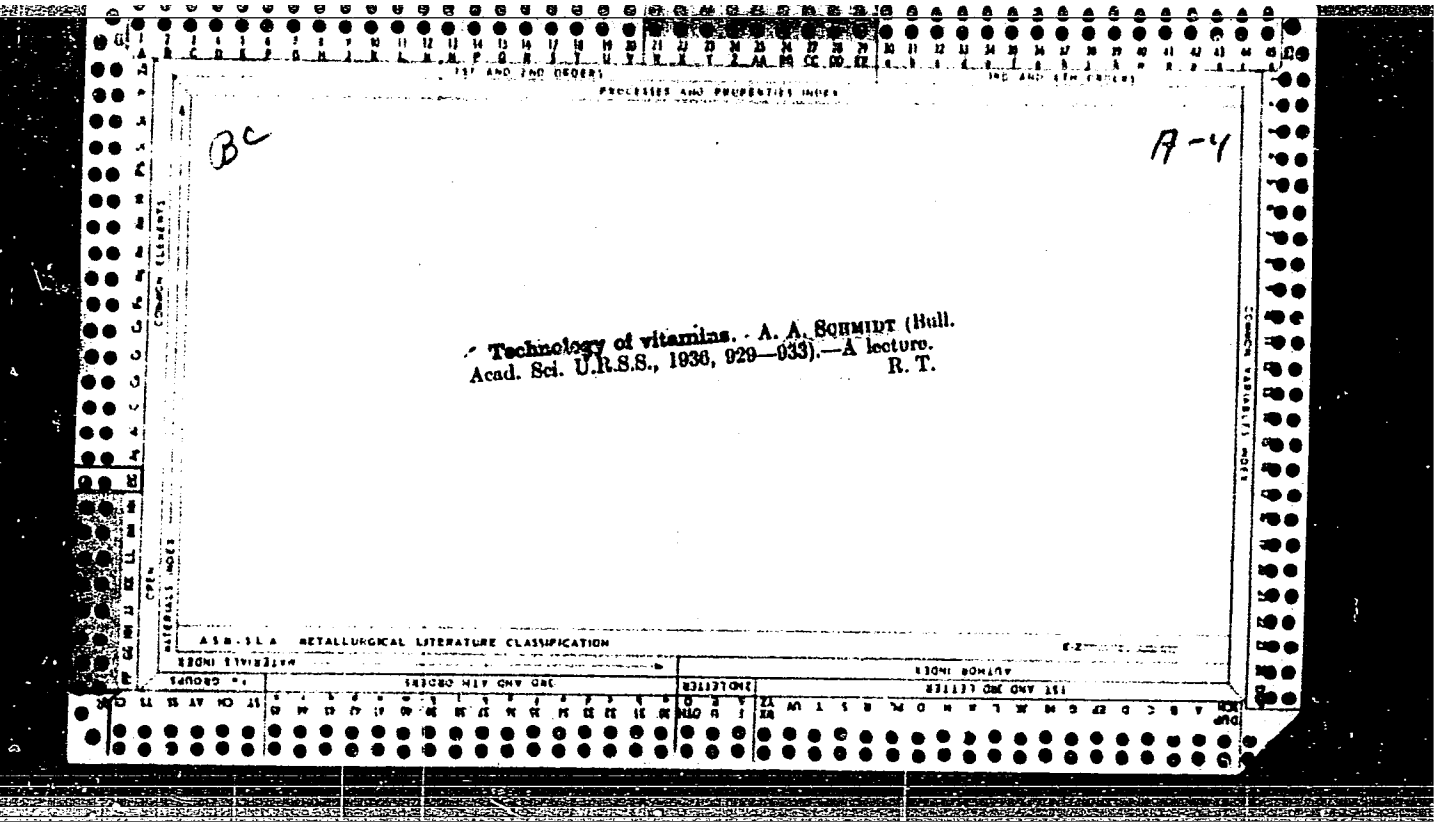


CA SHMIDT, A. A

Vitamin concentrates. A. A. Shmidt. *Proc. Inst. Sci. Research Food Ind.* (U. S. S. R.) 3, No. 2, 3–4(1935).—A comprehensive program of research is in progress for production of vitamin concentrates and their use in treating specific cases of avitaminosis, fortifying foods in vitamin potency and enriching the diet of the population through factory kitchens. This separate reports research results. **Studies of simplified diets used for biological assays of vitamin D.** Z. B. Kusova. *Ibid.* 5–12.—Attempts to simplify the Steenbock diet (white-rat tests) for vitamin D assays showed that millet is not a reliable substitute for maize. White bread with 3% $CaCO_3$ developed a low stage, and millet gruel with 6% $CaCO_3$ a medium stage of rickets. No acceptable substitute for the Steenbock diet was found. **Histological estimation of stages in experimental rickets.** A. A. Mikhaĭlova. *Ibid.* 13–22.—As an aid in the diagnostic examn. of test animals, histological study of the proximal part of the skin gives such an exact picture that 6 stages of rickets can be distinguished. Photographs of healthy and rachitic skin sections are shown. Changes resulting from varying vitamin dosage can thus be clearly and distinctly observed. **Experimental study of antirachitic preparations from sterols.** E. A. Markar'yan and V. V. Oppel. *Ibid.* 23–44.—Active antirachitic preps. can be made under aerobic conditions by dissolving 1 mg. of impure ergosterol (contaminated with other sterols) in 100 cc. alc. and irradiating. Yeast sterols, activated in this way, retained their potency even after 6 months' storage. In specific detn. of vitamin potency graphic interpolation is recommended as an aid in calcg. results. **Artificially fortifying foods with vitamin D concentrates.** E. A. Markar'yan. *Ibid.* 45–52.—Vitamin D enrichment of foods such as milk, butter and edible oils with suitably prepd. concentrates (irradiated ergosterol) gives products which can fully replace cod-liver oil and which can even be used in baked goods, since the potency persists after heating as high as 280° for 30–45 min. The concentrates show slightly higher activity when tested in an antirachitic diet than in butter or milk, probably because the dosage is more gradual and the assimilation more uniform. **Artificial vitamin B_1 enrichment of foods.** K. Z. Tul'chinskaya and Z. P. Karmanova *Ibid.* 53–65.—The loss of potency in cooking or processing foods after addn. of vitamin B_1 concentrates is: rice cakes (baked 1 hr. at 140°), about half; milk (pasteurized), $^1/_2$ to $^2/_3$; broth (steam sterilized at 100°), rather small loss; crackers (com. manuf.), nearly total loss. With proper attention to temp., p_H and other factors effective enrichment of bread, milk and soup concentrates is possible. **Pathological changes in the teeth of experimentally scorbutic guinea pigs.** A. A. Mikhaĭlova. *Ibid.* 66–73.—Histological examn. of the teeth is especially important in exptl. scurvy of guinea pigs. With longitudinal sections all stages of the progress of the disease can be followed and 2 forms (scurvy proper and scorbutic hypovitaminosis) can be distinguished. **Early diagnosis of experimental scurvy based on changes in the teeth.** A. A. Mikhaĭlova. *Ibid.* 74–8.—Microscopic examn. of the teeth of test animals will reveal significant changes as early as the 10th day; and different effects can be distinguished for total absence and mere deficiency of vitamin C in the diet. **Chemical determination of vitamin C.** I. D. Gadaskina.

Ibid. 79–87.—There is a disagreement, both qual. and quant. between the biol. assay of vitamin C and chem. detn. by the Egunov method (using the Bezssonov reagent). The discrepancy has not yet been explained. **Method of preparing antiscorbutic vitamin concentrates.** A. A. Shmidt and K. Z. Tul'chinskaya. *Ibid.* 88–111(in English 111–12).— Highly active antiscorbutic vitamin concentrates can be made from cabbage by treatment with citric acid and alc.; cranberries, which are cheaper, can be used instead of citric acid. The potency loss after storing the concentrates 7 months was about 1/4. **Vitamin C in some products of no nutritional value.** Z. B. Kusova. *Ibid.* 113–30.—From biol. assays of vitamin C potency in wild and cultivated plants, some were found which, though not nutritious, are rich in vitamin C. Some sources, with their preventive doses, are: black currant leaf (0.5–1.0 g.), carrot leaf (2.0 g.), red bilberry leaf (2.0–5.0). The last, though not highly potent, is valuable because available the year round in the Far North. Some grasses were tested but showed no vitamin C potency. **Antiscorbutic vitamin concentrates obtained from some products of no food value.** K. Z. Tul'chinskaya. *Ibid.* 131–44.—Pine needle concentrate has a high antiscorbutic potency (spruce needles less so); radish herb yields a fairly active concentrate but potato herb does not. Expt'l production of resin-free pine-needle concentrates is in progress. **Biological estimation of vitamin C by Tillmann's reaction.** K. Z. Tul'chinskaya. *Ibid.* 145–50.—The biol. dose of concentrates (in curative tests) corresponds to 10 cc. of the 2,6-dichlorophenolindophenol indicator. **Characteristics of the biosynthesis of antiscorbutic vitamin.** A. A. Shmidt and Z. P. Karmanova. *Ibid.* 151–9(in English 160).—Pea seedlings (4th day of germination) are 4 times as active as whole peas or 3 times as active as germinated peas in preventing scurvy in guinea pigs. **Correlation between acidity and ascorbic acid yield from a product.** A. A. Shmidt and K. Z. Tul'chinskaya. *Ibid.* 161–81.—By an improved method in which the medium is acidified with citric acid, HCl or H_2SO_4 freshly isolated ascorbic acid can be protected from deterioration by oxidases. The optimum p_H is about 1.0 (= 2–3% H_2SO_4). The new method yields concentrates with about 1000 curative units per kg. of cabbage or 3000–4000 per kg. of pine needles. Biol. assays indicate that the reducing substance detd. by means of 2,6-dichlorophenolindophenol indicator is ascorbic acid.

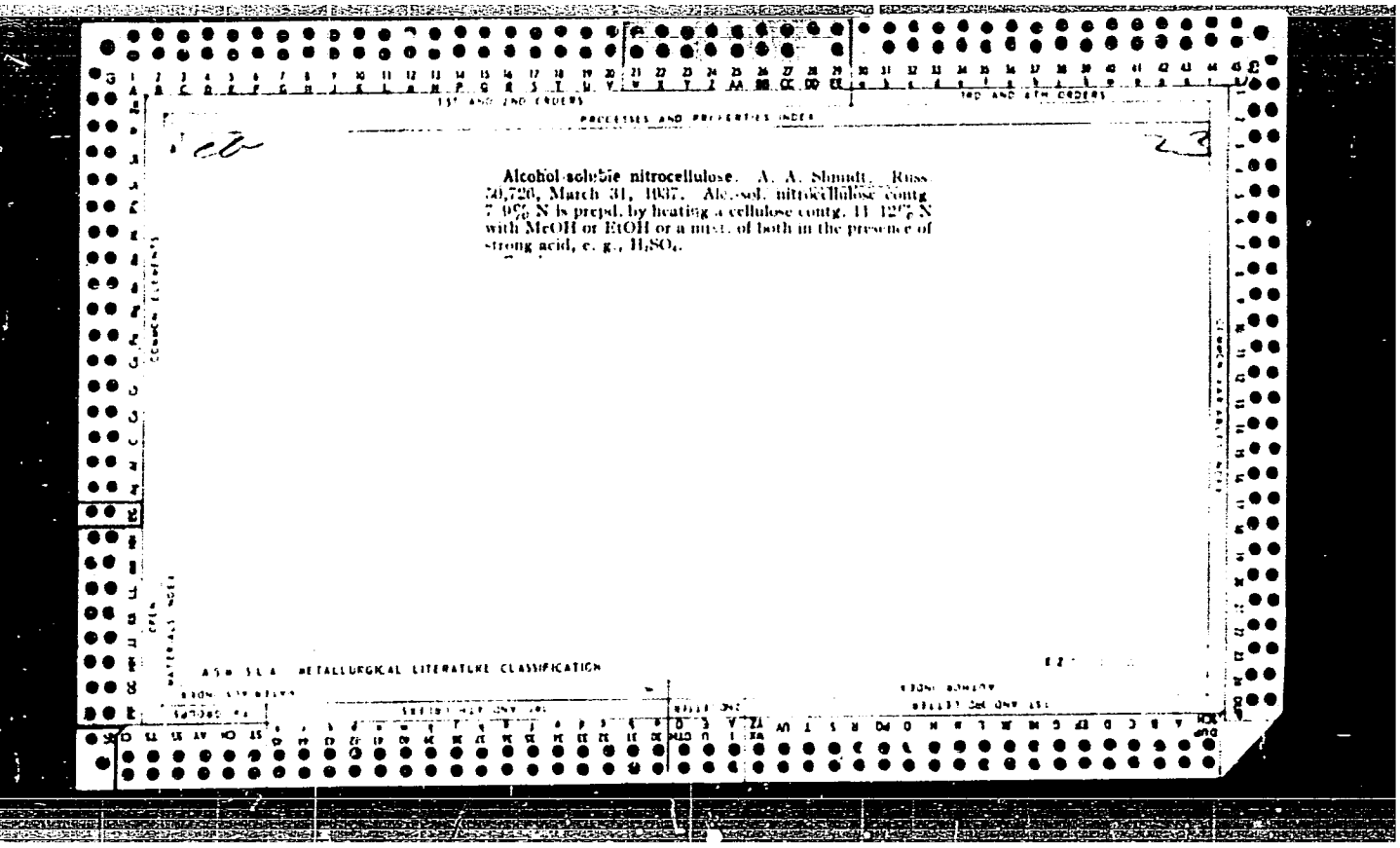
Julian P. Smith



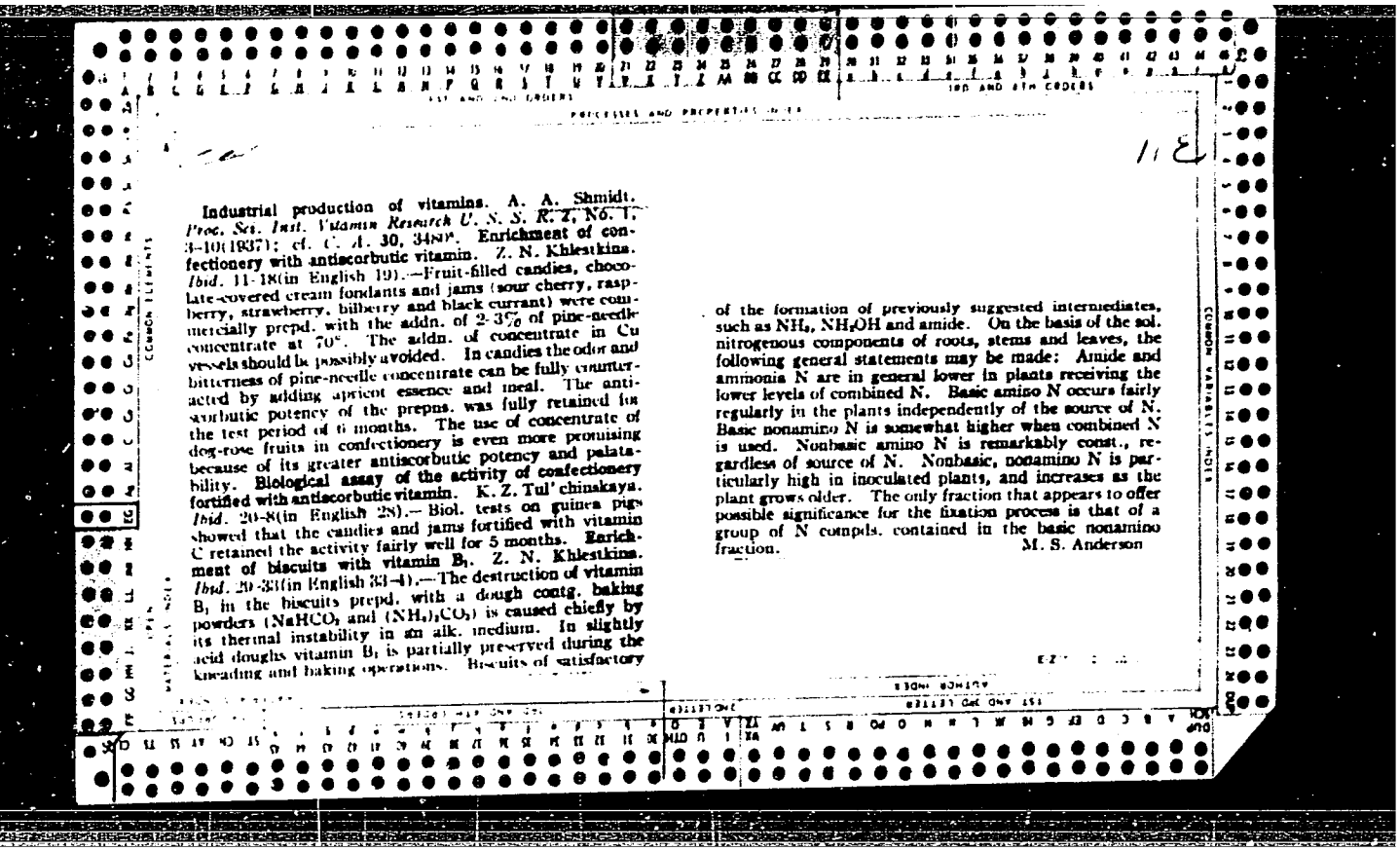
BC

A-4

Technology of vitamins. A. A. SCHMIDT (Bull. Acad. Sci. U.R.S.S., 1936, 929—933).—A lecture. R. T.

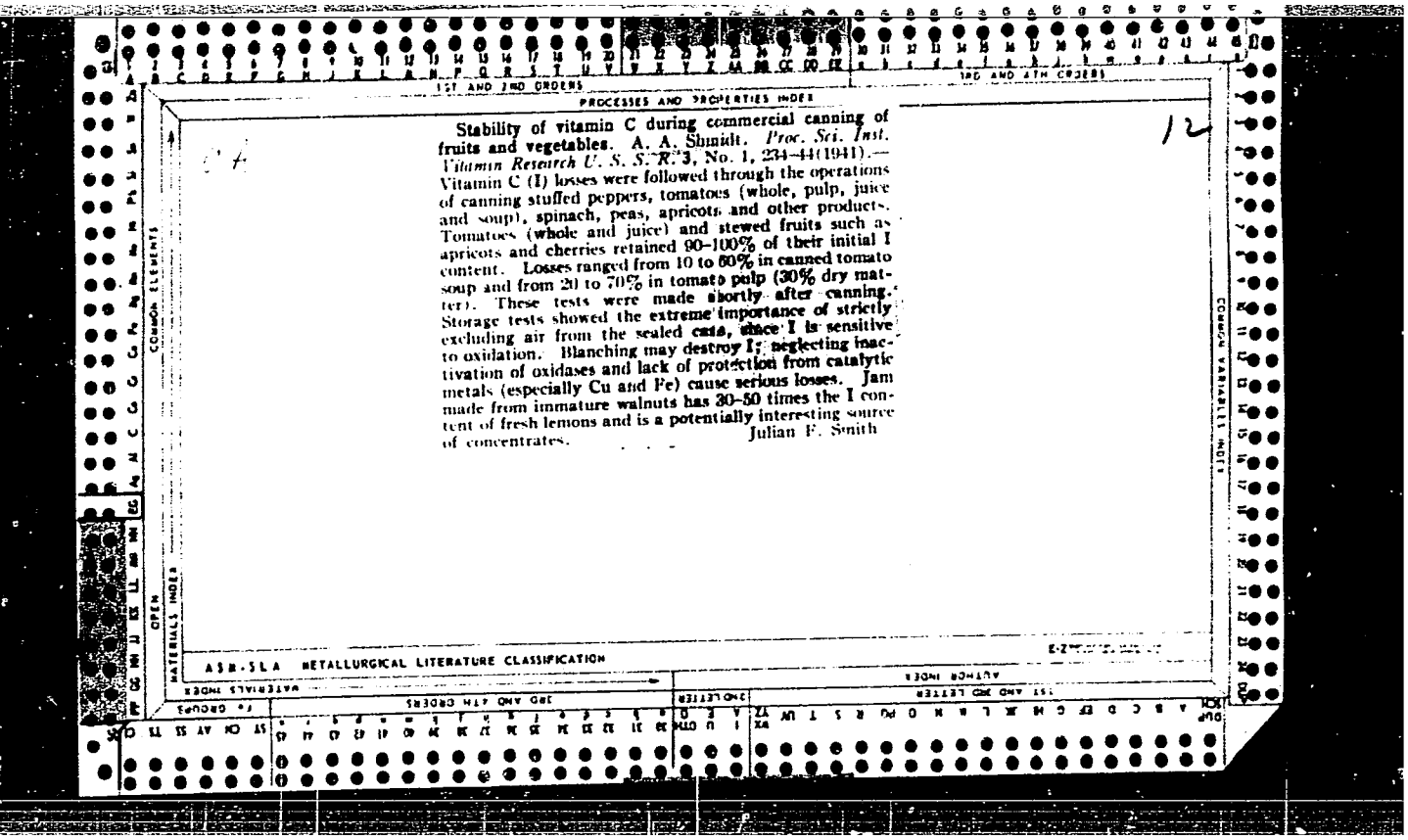


Alcohol-soluble nitrocellulose. A. A. Shmidt. Russ. 20,720, March 31, 1931. Alc.-sol. nitrocellulose contg. 7.0% N is prepd. by heating a cellulose contg. 11.12% N with MeOH or EtOH or a mixt. of both in the presence of strong acid, e. g., H_2SO_4.



Industrial production of vitamins. A. A. Shmidt. *Proc. Sci. Inst. Vitamin Research U. S. S. R.* 7, No. 1, 3–10(1937); cf. *C. A.* 30, 34[9]. **Enrichment of confectionery with antiscorbutic vitamin.** Z. N. Khlestkina. *Ibid.* 11–18(in English 19).—Fruit-filled candies, chocolate-covered cream fondants and jams (sour cherry, raspberry, strawberry, bilberry and black currant) were commercially prepd. with the addn. of 2–3% of pine-needle concentrate at 70°. The addn. of concentrate in Cu vessels should be possibly avoided. In candies the odor and bitterness of pine-needle concentrate can be fully counteracted by adding apricot essence and meal. The antiscorbutic potency of the prepns. was fully retained for the test period of 6 months. The use of concentrate of dog-rose fruits in confectionery is even more promising because of its greater antiscorbutic potency and palatability. **Biological assay of the activity of confectionery fortified with antiscorbutic vitamin.** K. Z. Tul'chinskaya. *Ibid.* 20–8(in English 28).— Biol. tests on guinea pigs showed that the candies and jams fortified with vitamin C retained the activity fairly well for 5 months. **Enrichment of biscuits with vitamin B_1.** Z. N. Khlestkina. *Ibid.* 29–31(in English 33–4).—The destruction of vitamin B_1 in the biscuits prepd. with a dough contg. baking powders ($NaHCO_3$ and $(NH_4)_2CO_3$) is caused chiefly by its thermal instability in an alk. medium. In slightly acid doughs vitamin B_1 is partially preserved during the kneading and baking operations. Biscuits of satisfactory

of the formation of previously suggested intermediates, such as NH_3, NH_2OH and amide. On the basis of the sol. nitrogenous components of roots, stems and leaves, the following general statements may be made: Amide and ammonia N are in general lower in plants receiving the lower levels of combined N. Basic amino N occurs fairly regularly in the plants independently of the source of N. Basic nonamino N is somewhat higher when combined N is used. Nonbasic amino N is remarkably const., regardless of source of N. Nonbasic, nonamino N is particularly high in inoculated plants, and increases as the plant grows older. The only fraction that appears to offer possible significance for the fixation process is that of a group of N compds. contained in the basic nonamino fraction. M. S. Anderson



PROCESSES AND PROPERTIES INDEX

Stability of vitamin C during commercial canning of fruits and vegetables. A. A. Shmidt. *Proc. Sci. Inst. Vitamin Research U. S. S. R.* 3, No. 1, 234–44(1941).—Vitamin C (I) losses were followed through the operations of canning stuffed peppers, tomatoes (whole, pulp, juice and soup), spinach, peas, apricots and other products. Tomatoes (whole and juice) and stewed fruits such as apricots and cherries retained 90–100% of their initial I content. Losses ranged from 10 to 60% in canned tomato soup and from 20 to 70% in tomato pulp (30% dry matter). These tests were made shortly after canning. Storage tests showed the extreme importance of strictly excluding air from the sealed cans, since I is sensitive to oxidation. Blanching may destroy I; neglecting inactivation of oxidases and lack of protection from catalytic metals (especially Cu and Fe) cause serious losses. Jam made from immature walnuts has 30–50 times the I content of fresh lemons and is a potentially interesting source of concentrates.

Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ŠMITS, A.A.

Some biochemical contentions on the significance of proteins and vitamins in human food. Latvijas PSR Zinātmu Akad. Vēstis '49, No.1, 83-94. (CA 47 no.18:9513 '53) (MLRA 4:1)

1. Food Inst., Acad. Sci. Latv. S.S.R., Riga.

SCHMIDT, A. A.

Schmidt, A. A. "Michurinist biological science--a basis for the contemporary study of human food supply", Izvestiya Akad. nauk Latv. SSR, 19 [illegible], No 4, p. 5-20, (In Latvian, resume in Russian).

SO: U-4392, 19 August 53, (Letopis 'Zhurnal 'nykh Statey, No 21, 1949).

1. SMIDT, A. A., Prof.

2. USSR 600

4. Proteins

7. New means of ensuring a protein-vitamin diet, Latv. PSR Zin. Akad Vestis, No. 11, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

ŠMITS, A., professor, doktor deystvitel'nyy chlen Akademii nauk Latviyskoy SSR.

I.P.Pavlov's teachings and Russian biochemistry. Latv.PSR Zin.Akad.Vēstis no.4:51-63 '52. (MLRA 6:7)

1. Akademiya nauk Latviyskoy SSR.
(Pavlov, Ivan Petrovich, 1849-1936) (Biochemistry)

Shmidt, A. A.

"Protein-Vitamin Concentrates, Their Preparation and Place in the Nutrition of Man," Izv. AN Latv. SSR, No 3, 1953, 67-75

Presents data on the above new nutritional product and its sources of preparation. Addition of the protein-vitamin concentrate to bread increases its nutritional value and taste. (RZhKhim, No 7, 1954)

SO: W31128, 11 Jan 55

SMITS, A.

Living protein and its basic chemical properties. A. Smits. *Latvijas PSR Zinātņu Akad. Vēstis* 1954, No. 8 (Whole No. 80), 23–41(in Russian).—Reviews works of Russian scientists on properties of the living proteins, largely in philosophical-political terms. A. D.

SMITS, A.

Further chemical and technological studies of a protein-vitamin concentrate and its clinical testing. A. Smits. *Latvijas PSR Zinātņu Akad. Vēstis* 1954, No. 5(Whole No. 82), 45–59(in Russian).—Protein-vitamin concentrate (I)

is a complex product obtained from vegetable and animal raw materials. It contained 36–40 γ % Co, which originates from yeast. The lipide content was 8–9%, originating from cow milk, sunflower oil, and yeast. The phosphatide content was 2.5–3.4. In clinical tests on hypotrophic children, with the condition resulting from dysentery or rickets, I improved both the wt. and the blood count, and was tolerated well. In grave cases, the suggested dosage is 2.5–3 kg. of I fed over a period of 6 weeks. A. D.

KREMER, Yu.N.; MEYROVITS, I.R.; SHMIDT, A.A.

Preservation of tryptophan during protein hydrolysis in the atmosphere of certain gases. Biokhimiia 24 no.4:697-699 Jl-Ag '59. (MIRA 12:11)

1. Kafedra biologicheskoy khimii Meditsinskogo instituta, Riga.
(TRYPTOPHAN chem.)
(FIBRIN chem.)

[redacted], [redacted], DMITRIEV, B. M., KORCHIN, V. A., [redacted] (USSR)

"Biochemical Bases For Raising the Biological Value of Protein Hydrolysates."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 August 1961

SMIRNOV L. A., KREMER, M. A., FRANK, D. L., KONTA, A. IA. (USSR)

"Enzyme Activity in Certain Animal Tissues as an Indication of the Biological Value of Protein Preparations."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961

SVE[illegible]P, A.A., MIRGINA, G.I., SOLAKHMETOV, G.N., YANSON, I.L., (USSR)

"The Influence of Triethylenethiophosphoamide on Blood Protein Synthesis in Anemia-sick Rabbits."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961.

KREMER, Yu.N. (Riga); SHMIDT, A.A. (Riga)

Methods for increasing the biological activity of protein hydrolysates. Vop. pit. 20 no.6:3-12 N-D '61. (MIRA 15:6)

1. Iz kafedry biologicheskoy khimii (zav. - akademik AN Latviyskoy SSR prof. A.A. Shmidt) Rizhskogo meditsinskogo instituta.

(BLOOD PLASMA SUBSTITUTES)

L 36827-66 EWP(m)/EWT(1) GD

ACC NR: AT6016795 (N) SOURCE CODE: UR/0000/65/000/000/0265/0282

57
56
B+1

AUTHOR: Krasnoshchekov, P. S.; Moiseyev, N. N.; Shmidt, A. G.;

ORG: Computing Center, Academy of Sciences, SSSR, Moscow (Vychislitel'nyy tsentr Akademii nauk SSSR)

TITLE: A class of problems in the dynamics of viscous fluid

SOURCE: International Symposium on Applications of the Theory of Functions in Continuum Mechanics. Tiflis, 1963. Prilozheniya teorii funktsiy v mekhanike sploshnoy sredy. t..2: Mekhanika zhidkosti i gaza, matematicheskiye metody (Applications of the theory of functions in continuum mechanics. v. 2; Fluid and gas mechanics, mathematical methods); trudy simpoziuma. Moscow, Izd-vo Nauka, 1965, 265-282

TOPIC TAGS: viscous fluid, fluid flow, fluid dynamics, boundary value problem, nonsteady flow, Navier Stokes equation, harmonic function, harmonic oscillation

ABSTRACT: This report is devoted to some problems in the theory of nonsteady flow of a viscous fluid, originating during the oscillation of various solids which either contain fluid or are immersed in a fluid, as well as during the oscillations of fluid volumes having a free surface. The authors primarily investigate linear problems, i.e., problems on the oscillations of fluids with small amplitude.

Card 1/2

L 36827-66

ACC NR: AT6016795

A discussion shows that the boundary-value problem for the determination of the velocity field of viscous fluid flow with certain conditions may be reduced to the boundary-value problem (in the general case not self-congugate) for harmonic functions. The report presents a general method for the solution of such problems and investigates a series of problems involving osc llations of low-viscosity fluids, specifically, such problems as the oscillation of a fluid of infinite depth, free oscillations of a fluid confined in a vessel, forced oscillations, and oscillations of a spherical layer. The methods developed for the asymptotic integration of linearized Navier-Stokes equations make possible an effective investigation of a class of problems on the oscillation of solids filled with a viscous fluid. Two such problems are treated: a) the problem of a pendulum with a viscous fluid, and b) the plane problem of the motion of a solid with a viscous fluid in a central force field. It is shown in case b that as a result of the dissipation of energy the orbit eccentricity will constantly diminish; the radius of the limiting circular orbit is determined. An attempt is made to extend the methods developed to the problem of nonlinear oscillations. Orig. art. has: 3 figures and 47 formulas.

SUB CODE: 20/ SUBM DATE: 13Sept65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

SHMIDT, A. G. (Moscow)

"Application of the method of asymptotic integration for solving problems of oscillations of a viscous liquid with free surface".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - February 1964.

ACCESSION NR: AP4012014 S/0208/64/004/001/0183/0189

AUTHOR: Shmidt, A. G. (Moscow)

TITLE: Gravitational and capillary waves on the surface of a spherical layer of viscous gravitating fluid

SOURCE: Zhurnal vychisl. matem. i matem. fiz., v. 4, no. 1, 1964, 183-189

TOPIC TAGS: gravitational wave, capillary wave, spherical layer, viscous fluid, gravitating fluid, small oscillation, surface tension, Reynold's number

ABSTRACT: The author studies small oscillations of viscous fluid which, at rest, has the form of a spherical layer whose interior is filled with solid matter. He assumes that the oscillations arise under the influence of gravitational forces and the forces of surface tension. He shows that for large Reynold's numbers an approximate solution of this problem can be obtained by an asymptotic method. A precise solution can also be constructed, but it contains Bessel functions of a complex argument, which creates difficulties in computing the oscillation frequency and the decrement of damping. In the case of non-oscillating, aperiodic conditions the computations are simpler because the argument of the corresponding Bessel functions is a real number. The asymptotic method makes it possible to find simple asymptotic

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ACCESSION NR: AP4012014

formulas for the oscillation frequency and the decrement of damping. In particular, the decrement of damping, in the case of a spherical layer, depends on the coefficient of surface tension, which does not hold for infinitely deep liquid in the form of a sphere. The author also investigates the problem of oscillations of viscous fluid of finite depth, whose solution can be obtained from the solution of the above problem with the help of passage to the limit. He gives asymptotic formulas for both the oscillation frequency and the decrement of damping. In the latter case the spectrum of frequencies is continuous, in contrast to the case where the fluid has the form of a spherical layer or a sphere, where the corresponding spectrum is discrete. "In conclusion I express my gratitude to N. N. Moiseyev for his constant attention to and interest in this work, expressed in a whole series of remarks valuable to me." Orig. art. has: 16 formulas.

ASSOCIATION: none

SUBMITTED: 20May63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: AI NO REF SOV: 004 OTHER: 003

Card 2/2

SHMIDT, A.G. (Moskva)

Oscillations of a viscous fluid of finite depth caused by the initial displacement of its free surface. Zhur. vych. mat. i mat. fiz. 5 no.2:287-297 Mr-Ap '65.
(MIRA 18:5)

BORODAYEVSKAYA, M.B., SHMIDT, A.I.

Session devoted to the study of the distribution of copper pyrite and copper porphyry deposits. Geol. rud. mestorozh. no.4:127-132 Jl-Ag '60. (MIRA 13:8)
(Porphyry) (Chalcopyrite)

SHMIDT, A.I.

Age ratio of sulfopyrite and gold complex metal mineralization in the Kurosan ore deposit (Southern Urals). Geol.rud. mestorozh. no.5:27-40 N-D '61. (MIRA 14:12)

1. TSentral'nyy nauchno-issledovatel'skiy gornorazvedochnyy institut, Moskva.
(Ural Mountains--Pyrites)
(Ural Mountains--Gold ores)

SHMIDT, A. I.

Determining the length of a block. Izv. vys. ucheb. zav., tsvet. met. 4 no.2:111-121 '61. (MIRA 14:12)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra razrabotki rudnykh i rossypnykh mestorozhdeniy.
(Mining engineering)

SHMIDT, A.I., inzh.-mekhanik

Reconditioning the supporting rollers of tractors. Mekh. sil'. hosp. 14 no.11:24 N'63. (MIRA 17:2)

SHMIDT, A.I., gornyy inzh.

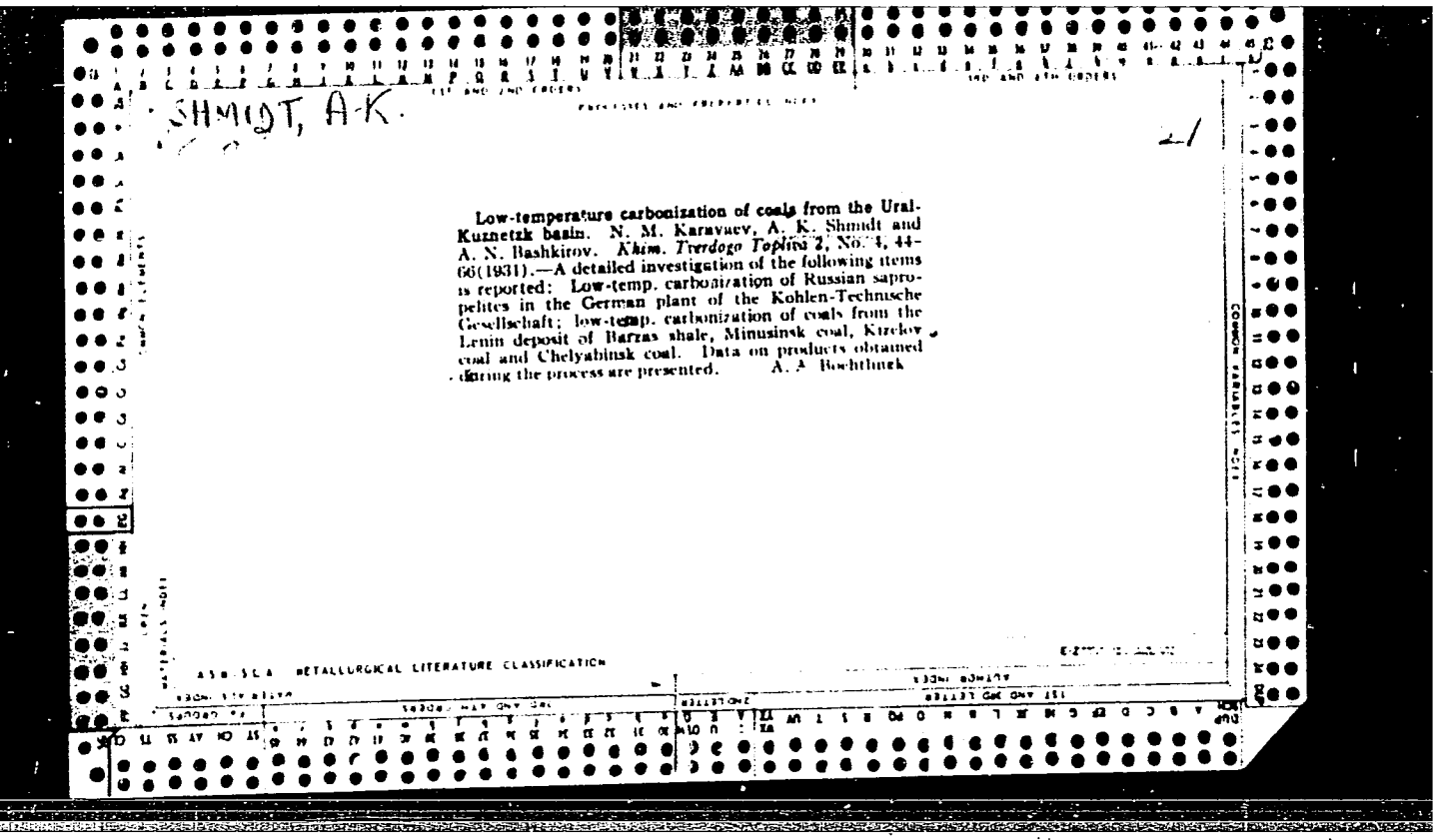
Determining the length of a block in working vein deposits.
Gor. zhur. no.3:31-37 Mr '63. (MIRA 16:4)

1. Institut gornogo dela imeni Skochinskogo.

SHMIDT, A.I.; SHIRAY, Ye.P.

Adularization of rocks enclosing gold-pyrite ores in the Kurosan deposit (Southern Urals) and the depth of the formation of pyrite deposits. Dokl. AN SSSR 160 no.1:204-207 Ja '65. (MIRA 18:2)

1. TSentral'nyy nauchno-issledovatel'skiy gorno-razvedochnyy institut tsvetnykh, redkikh i blagorodnykh metallov. Submitted July 7, 1964.



SHMIDT, A.K.

Low-temperature carbonization of coals from the Ural-Kuznetsk basin. N. M. Karavaev, A. K. Shmidt and A. N. Bashkirov. *Khim. Tverdogo Topliva* 2, No. 4, 44-66(1931).—A detailed investigation of the following items is reported: Low-temp. carbonization of Russian sapropelites in the German plant of the Kohlen-Technische Gesellschaft; low-temp. carbonization of coals from the Lenin deposit of Barzas shale, Minusinsk coal, Kizelov coal and Chelyabinsk coal. Data on products obtained during the process are presented. A. A. Bochtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SHMIDT, A.K.

ZIKIYEV, Tikhon Alekseyevich; SHMIDT, A.K., otvetstvennyy red.; RYKOV, N.A., red.izd-va; ALADOVA, Ye.I., tekhn.red.

[Handbook on the quality of coals and fuel shales in the Soviet Union] Spravochnik po kachestvu iskopaemykh uglei i goriuchikh slantsev Sovetskogo Soiuza. Moskva, Ugletekhizdat, 1957. 144 p. (MIRA 11:6)

(Coal mines and mining—Handbooks, manuals, etc.)
(Shale—Handbooks, manuals, etc.)

LEVITSKIY, Ya.B.; MASKIN, M.G.; GRIGOR'YEV, G.I.; SHMIDT, A.K.; GREK, A.I.

For radical changes to improve coal quality standards. Ugol' 32 no.10: 44-45 O '57. (MIRA 10:11)

(Coal--Grading)

SOV-28-58-4-14/35

AUTHORS: Shmidt, A.K., and Ponomarev, I.V., Engineers

TITLE: Mechanized Selection of Trade Coal Samples (Mekhanizirovannyy otbor tovarnykh prob uglya)

PERIODICAL: Standartizatsiya, 1958, Nr 4, pp 48 - 50 (USSR)

ABSTRACT: In order to mechanize and automate coal sample selection, various machines are recommended and described: drilling sampler designed by KUZNIUI (fig. 1); bucket sampler designed by the Leningrad Branch of NIIU (fig. 2); "MDV" hammer crusher (fig. 3); complex unit for separating initial and analytical samples, designed by NIIUgleobogashcheniye (fig. 4); "MD-70" hammer crusher (fig. 5). The slow development of mechanization in this field is criticized and the necessity to bring about full mechanization in coal sample selection and separation is stressed. There are 3 photos and 2 diagrams.

1. Coal--Sampling

Card 1/1

SHMIDT, Aleksandr Karlovich; KARPOVICH, V.L., otv.red.; GARBER, T.N., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

[Establishing standards of coal quality] Normirovanie kachestva uglei. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 169 p. (MIRA 13:11)
(Coal--Standards)

KHAZANOV, V. S., kand. tekhn. nauk; SHMIDT, A. M., inzh.;
KOLESNIKOV, V. N., inzh.

System for determining the electrical and light parameters of fluorescent lamps during their manufacture. Svetotekhnika 8 no.9:14-16 S '62. (MIRA 15:10)

1. Vsesoyuznyy svetotekhnicheskiy institut.

(Fluorescent lamps)

SHMIDT, A.M., inzh.; RINGER, V.Ye., inzh.

Unit for continuous voltage control in the power supply of high power low-voltage lamps. Elektrotekhnika 36 no.2:38 F '65.
(MIRA 18:4)

SHMIDT, A. O.

USSR/Electricity Dec 1947
Rotors
Coils-Winding

"New Methods in Rewinding Rotors with Aluminum Coils," V. I. Zil'berberg, Engr; A. O. Shmidt, Gor'kiy Automobile "orks imeni V. M. Molotov, 1 p

"Prom Energetika" No 12

Briefly describes repairs made on housing of shortcircuit rotor at one of the plants GAW imeni V. M. Molotov. Although a rotor with an aluminum housing usually is considered very durable, and repairs on this type of assembly are considered uneconomical, at times they are necessary in spite of high cost involved.

PA 52T16

Shmidt, Aleksey Osipovich

SOV/144-58-10-11/17

AUTHORS: Bamdas, A.M., Doctor of Technical Sciences, Professor; Somov, V.A., Candidate of Technical Sciences, Lecturer and Shmidt, A.O., Assistant

TITLE: Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts (Nekotoryye varianty konstruktsiy odnofaznykh i trekhfaznykh transformatorov, reguliruyemykh podmagnichivaniyem shuntov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 10, pp 115-123 (USSR)

ABSTRACT: Many articles on single-phase transformers controlled by the submagnetisation of shunts suggest including the magnetic shunts in the secondary winding window as shown in Fig 1a and b. With this construction the secondary winding is linked with the main flux of the primary winding and the opposing flux of the shunt. Regulation is effected by altering the submagnetisation flux. With this arrangement the magnetic system is complicated and the primary is located inside the secondary, which is inconvenient when designing dry high-voltage step-down transformers. Therefore,

Card 1/8

Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts

constructions have been developed in which the shunts are located in the window of the primary winding. In this case the secondary winding is linked by the resultant flux of the primary winding and the shunt. Single-phase transformers with submagnetisation shunts in the primary winding window are then considered in more detail. In all the constructions described the primary windings are outside the secondary. The construction of the transformers illustrated in Fig 2 differs from those shown in Fig 1 in that the main legs of the core carry the secondary winding instead of the primary and the external primary winding encloses the main leg and the magnetic shunt with submagnetisation winding. A number of constructions are then described in which the main and supplementary magnetic systems are separate so that the transformers have cores of normal type. The simplest form of this construction is illustrated in Fig 3 and it will be seen that two cores, one carrying the secondary winding and the other the

Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts

submagnetisation winding are placed side by side and the primary winding is wound round the two together. Two identical transformers of this construction are needed for connection to a single phase supply, their primary and secondary windings are connected in series or in parallel and the submagnetisation windings are connected back-to-back to supress the alternating emf's induced in them. In some cases additional steps have to be taken to compensate the alternating emf in the auxiliary winding. The degree of voltage control that can be achieved with such transformers depends on a number of factors. Curves of the secondary voltage as a function of the submagnetisation current are given in Fig 4 for several values of load resistance on an experimental model of the transformer. The transformer was intended for wide range of voltage control on load and has an additional submagnetisation winding on the main core. The construction of the transformer, which is illustrated in Fig 3 is most simple and convenient for use with wound torroidal cores. A transformer with

Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts

one main core and two submagnetisation cores is illustrated in Fig 5. The submagnetisation windings on the two cores are cross-connected so that only one transformer is required instead of two. Fig 6 illustrates a variant of the construction described in Fig 5 in which the main magnetic circuit and the two submagnetisation cores are all arranged in a single plane. A transformer with the main magnetic system of the core type and an auxiliary magnetic system with four legs is shown in Fig 7. The submagnetisation windings are cross connected in pairs and the legs of the auxiliary magnetic system are longer than that of the main system so that the submagnetisation windings can be increased in length and reduced in diameter. A transformer designed for wide range of control secondary voltage at no-load and variable load is illustrated in Fig 8. Both main and auxiliary cores have three legs. The submagnetisation winding is wound on the middle leg of its core and hardly

 any power frequency emf is induced in it. The choice of

Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts

transformer construction must be decided in each individual case separately. Three-phase transformers controlled by submagnetisation of shunts are then considered. Such three-phase transformers may consist of combinations of two or three single-phase transformers with sub-magnetised shunts or specially constructed three-phase transformers. All the constructions of single-phase transformers that have been described may be used for three-phase groups. The submagnetisation circuits of the individual single-phase transformers can be fed from a common d.c. supply. Special three-phase transformers are more compact than single-phase groups and their construction is analogous with that of single-phase transformers. Three-phase transformers with magnetic shunts in the windows of the secondary windings are first considered. The simplest construction of three-phase transformer of this type is illustrated in Fig 9. In effect the magnetic system of the transformer consists of three separate cores each with three legs with a common yoke. With this construction

Some Variants of Construction of Single-Phase and Three-Phase Transformers Controlled by Submagnetisation of Shunts

a shell-type magnetic system may be used for each phase. A disadvantage of the construction is that there is cross submagnetisation of small sections of the main magnetic circuit by constant current of the shunt which somewhat increases the reactive component of the primary winding current. In the construction illustrated in Fig 10, the main magnetic circuit is a standard three leg magnetic system. Each phase of the primary winding is wound on one leg of this core and all three phases have independent magnetic shunts. The secondary windings are wound round the main legs and the legs of the magnetic shunts. With this construction the main flux is separated from the submagnetisation flux. A disadvantage is that the system is rather difficult to assemble. A design due to Engineer B.N.Solov'yev of the Gor'kiy Council of National Economy for a three-phase transformer with a magnetic system having nine cores arranged in a single plane is shown in Fig 11. Three-phase transformers with separate magnetic shunts in the

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primary winding window are then considered. A possible construction is illustrated in Fig 12, the secondary winding is wound on three legs of an ordinary three-phase core, the submagnetisation winding is wound on the inner legs of a five leg auxiliary core. Better compensation of the emf's of the fundamental and higher harmonics in the sub-magnetisation circuit is given by the three-phase construction illustrated in Fig 13, in which the submagnetisation winding is arranged on two magnetic shunts which are on two five-leg cores. A fairly simple construction is illustrated in Fig 14, in which the secondary winding is wound on an ordinary three-phase magnetic system, perpendicular to which are three single-phase two-leg cores which carry the submagnetisation windings. A further variant of this construction is illustrated in Fig 14, in which there are three pairs of single-phase cores for the shunts on

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which the windings are cross-connected in pairs. There are 15 figures and 5 Soviet references.

ASSOCIATION: Kafedra Obshchey i Teoreticheskoy Elektrotekhniki i Elektricheskikh Mashin i Apparatov Gor'kovskogo Politekhnicheskogo Instituta (Chair of General and Theoretical Electrical Engineering, Gor'kiy Polytechnical Institute)

SUBMITTED: 29th September 1958

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SHMIDT, A O

8(3) PHASE I BOOK EXPLOITATION SOV/2467

Bamdas, Aleksandr Markovich, Vladimir Aleksandrovich Somov and Aleksey Osipovich Shmidt

Transformatory i stabilizatory, reguliruyemyye podmagnichivaniyem shuntov (Transformers and Stabilizers Controlled by Magnetizing Shunts) Moscow, Gosenergoizdat, 1959. 135 p. 12,000 copies printed.

Ed.: M. A. Boyarchenkov; Tech. Ed.: G. Ye. Larionov

PURPOSE: This booklet is intended for staff members of scientific research institutes, laboratories and design offices engaged in the development of transformers and stabilizers. It may also be useful to students of electrical engineering departments of vuzes.

COVERAGE: The authors discuss new transformers and voltage stabilizers regulated under load by means of magnetizing shunts. They explain the theory of operation and methods of design. They also present design examples and discuss automatic control circuits of stabilized transformers and autotransformers. The material is based largely on the authors' original work in the design of transformers regulated by means of magnetizing shunts.

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No personalities are mentioned. There are 67 references; 66 Soviet (including 9 translations) and 1 German.

TABLE OF CONTENTS:

Schmidt, A.C.

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AUTHORS: Rameev, A. M., Kulinich, V. A., Gerov, V. A., Buchkov, V. A., Shapiro, S. Y., Shmidt, A. A., Gu Shen-fu (Co-ki'y)

TITLE: New Electromagnetic Control Organs for Automatic Control Systems

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 6, pp. 907 - 917

TEXT: New transformers were designed at the Gor'kovskiy politekhnicheskiy institut im. A. A. Zhdanova (Gor'kiy Polytechnic Institute im. A. A. Zhdanov) for the construction of control organs for automatic control systems without switching contacts, mobile parts, or electronic elements (Ref.: Footnote on p. 907). They are controlled by changing the premagnetization of shunts located in the secondary windings (Fig. 1). Such control organs of a capacity of 0.1 - 150 kva are used in a number of plants in the USSR. A single-phase transformer of this type of 5600 kva is being developed at present. The various systems of such transformers are de-

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scribed here. The data refer to investigations carried out in 1959 but not yet published. The paper of Ref. 2 reported on previous investigations. First, the authors describe two principal constructions of single-phase transformers of this type: one for controllers with reflective control, the other for control elements of various stabilizers. These constructions are shown in Figs. 2 and 3, respectively. Some of their parameters are characterized. Fig. 4 shows the circuit diagram of an automatic control of an electric drive with voltage stabilization and abrupt cutoff. As second group of these new transformers, single-phase transformers with feedback are described. The use of an external feedback (Fig. 5) reduces the inertia of the control signal without reducing the weight of the transformer. An internal feedback, however, leads to a relative reduction of the copper weight of the transformer by about 15 %. The parameters of a 1.55-kva transformer are indicated. The authors give a mathematical analysis of the operation of a transformer of the new type. It is shown that such an ideal transformer, like an ideal magnetic amplifier, is an aperiodic member of the first order with a time constant according to formula (6). Next, the authors describe their group transformer with three single-phase transformers of the type mentioned (Fig. 8). It is used for

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the continuous control of a three-phase voltage with symmetric loads of the phases. The experiments showed that the characteristics of the group transformer are satisfactory. Finally, the authors describe static converters of the number of phases with a transformer of the new type mentioned (Fig. 9). The analysis shows that the stabilization of the symmetry of a multiphase system requires an adjustment of the parameters of the control organ, i.e., the converter. In Fig. 10 is shown a circuit relative values the inductances and capacitances of the three-phase branches (on conversion of a single-phase current into a three-phase current) must have at a change of the relative values of the apparent power and at different power coefficients. The parameters may be changed automatically (Ref.: Footnote on p. 916) if the control organ elements are adjustable. Such elements may be saturation chokes, or new transformers of the type described. Fig. 11 shows a corresponding modification of the circuits shown in Fig. 9. There are 11 figures and 9 Soviet references.

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